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EXAMINER

LEVITAN, DMITRY

ART UNIT PAPER NUMBER

2662

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/849,478

Applicant(s)

SUGINO ET AL.

Examiner

Dmitry Levitan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 08/07/01, 09/13/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### *Claim Objections*

1. Claims 10-15 and 19-21 are objected to because of the following informalities:

Claim's 10-14 limitations "the channel of the input signal" lacks antecedent basis and claim 15 is objected to as a claim dependent on the objected claim 12.

Claim's 19 limitation "second tone signal detecting means" is not clear because it is not understood what is first tone detecting means.

Claim's 20 limitation "third tone detecting means" is not clear because it is not understood what are first and second tone detecting means.

Claim's 21 limitation "fourth tone detecting means" is not clear because it is not understood what are first, second and third tone detecting means.

Claim's 21 limitation "specified frequency based on No. 5 signaling" is unclear, because it is not understood what is No. 5 signaling.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 5-10, 12, 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over King in view of ITU-T V.8 bis standard (August 1996, XP002284873).

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3. Regarding claims 1, 2, 5, 6, 10 and 12, King substantially teaches the limitations of the claims:

A transmission apparatus (residential service system 10 on Fig. 1 and 2, 3:13-36) comprising:

Specified signal detecting means for detecting a specified signal from an input signal consisting of one of speech signal and a voice band signal (modem detect circuitry of capacity management module 58 on Fig. 2, detecting the initial data tone to distinguish a modem data call from a voice call, including detecting ANSam tone 3:53-63); and

Transmitting means for transmitting the input signal to opposite side equipment as a transmission signal via a transmission line such that the transmission signal has different quality depending on whether said specified signal detecting means detects the specified signal or not (transmission means of transceiver 14 of residential service system 10 on Fig. 1, comprising codec 54 on Fig. 2 providing different coding schemes, depending on the detecting data or voice transmission 3:53-65, including clear channel 64 kbits/s for data 4:35-39, to transmit across air interface 44 on Fig. 2, as a transmission line comprises an air interface/satellite line per Application 16:13-15).

King does not teach using V.8 bis protocol.

ITU-T V.8 bis standard of August 1996 teaches using V.8 bis protocol.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add using V.8 bis protocol of ITU-T V.8 bis standard to the system of King to improve the system compatibility with equipment using widely popular V.8 bis standard.

In addition, regarding claim 2, King teaches detecting ANSam signal in a prescribed startup procedure (startup procedure including a data call detection, shown as block 70 on Fig. 3 and 5:19-32).

In addition, regarding claim 5, King teaches using coding means to maintain the quality of the input signal depending on the specified signal detection and a predetermined quality if the specified signal is not detected (using clear/null channel 64 kbit/s for data and 32 kbit/s rate coding for voice 4:35-55).

In addition, regarding claim 6, King teaches using coding means to maintain first and second quality of the input signal (codec 54 on Fig. 2 with 64 K for data and 32 K for voice).

In addition, regarding claims 10 and 12 (as understood), King teaches activity detector and disconnect detecting means to detect a new call and its disconnect after the specified detecting means detects the specified signal (inherently part of the capacity management module 58, because maintaining the current capacity of the system requires adjustment of the system capacity by the amount of new and disconnected calls capacities, so the activity detector and the disconnect detecting means are essential for the system).

4. Regarding claim 7, King teaches a receiving-side apparatus for receiving signals from the opposite side equipment and converting them into an output original signal (receiving portion of transceiver 14 on Fig. 1, including codec 68 operating with downlink signals 5:5-18 and downlink portion of linear codec 52 converting the input signal of codec 65 on Fig. 2 into the output signal of codec 52) and transmission-side apparatus comprising specified signal detection means and transmitting means (capacity management module 58 and transceiver 14 transmitting means comprising uplink codec 54 of the transmission-side of the system on Fig. 2 and 4:18-50).

5. Regarding claim 8, King teaches message transmitting and receiving means to indicate a request for switching the quality of the transmission signal and transmitting means switching the quality of the transmission signal (inherently part of the King's system, because King teaches two pairs of codecs 54/56 and 66/68 on Fig. 2, wherein the codes are switched as pairs under the control of capacity management module 58 4:29-48, making codec switching request message means essential for the system operation).

6. Regarding claims 9 and 16, King teaches detected information transmitting means for detecting the specified signal (modem detect circuitry of module 58 on Fig. 2 and 3:53-60 and inherently similar modem detect circuitry in base station 18, because uplink and downlink operations are similar in the system 5:5-15, as modem detect circuitry in base station 18 is essential for the system operation) and transmitting the detected information to the opposite side; and detected information receiving means to receive the information and transmitting means switching the quality of the transmission signal (inherently part of the King's system, because King teaches two pairs of codecs 54/56 and 66/68 on Fig. 2, wherein the codes are switched as pairs under the control of capacity management module 58 4:29-48, as receiving the detected information means from the other side and switching quality of the transmission signal means on both sides are essential for the system operation).

7. Regarding claim 17, King teaches transmitting an input signal consisting of fax (fax machine (not shown) attached to the line interface card 12 on Fig. 1 and 3:26-31) from a calling side to the opposite side equipment in a predetermined first quality and transmitting the facsimile signal from the caller to the opposite side equipment in the lower quality (implementing

progressively reduced coding scheme on data signals, therefore reducing the facsimile signal quality 4:35-48).

8. Regarding claim 18, King teaches new call connection detection means for detecting new call connection, wherein when said new call connection detecting means detects the new call connection after said specified signal detecting means detects the specified signal and switches the quality of the corresponding transmission signal depending on the detection of the specified signal (capacity management module 58 on Fig. 2 and 3:45-65, monitoring the capacity of the system for all new calls, detects the initial data tone to identify a data call from a voice call and provides different quality coding schemes based on the initial tone detection 4:35-48).

9. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over King in view of ITU-T V.8 bis standard and in further view of ITU-T V.21 standard (1988).

King substantially teaches the limitations of parent claim 1 (see the rejection of the claim 1 above), including detection of the initial 2.1 kHz data tone from the input signal to identify a modem/data call from a voice call 3:60-64 in a prescribed startup procedure, shown as block 70 on Fig. 3 and 5:19-32, and transmit call in a specified quality 3:38-44.

King does not teach using V.21 channel #1 signal for detecting a data call. ITU-T V.21 standard (1988) teaches using V.21 channel #1 signal as essential part of a data call (channel #1, 1080 Hz, is used for transmission of the caller's data towards the called station V.21 pages 1 and 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add using V.21 channel #1 signal for detecting a data call of ITU-T V.21 standard

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to the system of King and ITU-T V.8 bis standard to improve the system compatibility with widely used V.21 modems.

10. Claims 11 and 13-15 (as understood) are rejected under 35 U.S.C. 103(a) as being unpatentable over King in view of ITU-T V.8 bis standard in further view of Rasmussen (US 6,088,600).

11. Regarding claim 11, King in view of ITU-T V.8 bis standard teaches all the limitations of the parent claims 1 and 7.

King in view of ITU-T V.8 bis standard does not teach making a decision to disconnect when an inactive state is detected by first activity detector and opposite side/second activity detector detects an inactive state.

Rasmussen teaches making a decision to disconnect when the input signal continues the inactive state for more than a predetermined time period/first activity detector (monitoring signals from DTE 15 by modem 100 on Fig. 1 and generating an interrupt on DTE transmission inactivity 4:39-63) and when the transmission signal from the opposite side/second activity detector corresponding to the input signal is in inactive state (modem 100 detecting a request from the far-end indicating the inactive state of the modem at the far-end 9:3-9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add teachings of inactivity monitoring of both sides of Rasmussen to the system of King and ITU-T V.8 bis standard to improve the system disconnection protocol by saving the system capacity disconnecting an inactive channel on the disconnect information from both sides.



12. Regarding claims 13 and 14, King in view of ITU-T V.8 bis standard teaches all the limitations of the parent claim 12.

King in view of ITU-T V.8 bis standard does not teach making a decision to disconnect when the input signal continues the inactive state for more than a predetermined time period and when the transmission signal from the opposite side corresponding to the input signal is in inactive state.

Rasmussen teaches making a decision to disconnect when the input signal continues the inactive state for more than a predetermined time period (monitoring signals from DTE 15 by modem 100 on Fig. 1 for predetermined period of time and generating an interrupt on DTE transmission inactivity after the predetermined time period has expired 4:39-63) and when the transmission signal from the opposite side corresponding to the input signal is in inactive state (modem 100 detecting a request from the far-end indicating the inactive state of the modem at the far-end 9:3-9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add teachings of inactivity monitoring of both sides of Rasmussen to the system of King and ITU-T V.8 bis standard to improve the system disconnection protocol by avoiding premature disconnect and saving the system capacity by disconnecting an inactive channel on the disconnect information from both sides.

13. Regarding claim 15, King in view of ITU-T V.8 bis standard teaches all the limitations of the parent claim 12, including monitoring a transmission and reception protocol of fax or data input signal, as described in the rejection of claim 1.

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King in view of ITU-T V.8 bis standard does not teach making a decision to disconnect by monitoring a transmission and reception protocol of fax or data at the opposite side equipment.

Rasmussen teaches making a decision to disconnect by monitoring a transmission and reception protocol of fax or data at the opposite side equipment, disconnecting when the transmission signal from the opposite side corresponding to the input signal is in inactive state (modem 100 detecting a request from the far-end indicating the inactive state of the modem at the far-end 9:3-9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add teachings of inactivity monitoring of both sides of Rasmussen to the system of King and ITU-T V.8 bis standard to improve the system disconnection protocol by avoiding premature disconnect and saving the system capacity by disconnecting an inactive channel on the disconnect information from both sides.

14. Claims 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over King in view of ITU-T V.8 bis in further view of Farris (US 6,574,216).

King in view of ITU-T V.8 bis teaches all the limitations of the parent claim 1 (see the rejection of claim 1 above), including transmission means for connecting residential service systems 10 with integrated base station 18 on Fig. 1 and specified signal detecting means to detect the data modem call.

King in view of ITU-T V.8 bis does not teach assembling the input signal in IP packets for transmission, based on the specified signal detecting.

Farris teaches a system comprising PSTN and Internet (communication system on Fig. 3 comprising PSTN and Internet), wherein the call is directed to one of the networks, depending on a specified signal detection (directing a call to Internet or PSTN based on a unique entry code 9:35-57) and an Internet Module to assemble the call signal into IP packets (packetizing the call data 9:11-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add using IP packet assembler to the system of King and ITU-T V.8 bis standard to improve the system connection from the residential service systems to the Internet, by incorporating an IP packet assembler, simplifying the Internet connection process and improving the system reliability by adding an additional network.

15. Claims 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over King in view of ITU-T V.8 bis in further view of Farris (US 6,574,216).

King in view of ITU-T V.8 bis teaches all the limitations of the parent claim 1 (see the rejection of claim 1 above), including transmission means for connecting residential service systems 10 with integrated base station 18 on Fig. 1 and specified signal detecting means to detect the data modem call.

Farris teaches a system comprising PSTN and Internet (communication system on Fig. 3 comprising PSTN and Internet), wherein the call is directed to one of the networks, depending on a specified signal detection (directing a call to Internet or PSTN based on a unique entry code 9:35-57) and an Internet Module to assemble the call signal into IP packets (packetizing the call data 9:11-25).

King in view of ITU-T V.8 bis in further view of Farris does not teach assembling the input signal in an ATM cells for transmission.

Official notice is taken that ATM cell assemblers are well known in the art and are expected to be used to convert a call into ATM format for transmission on widely available ATM networks.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add using ATM cell assembler to the system of King, ITU-T V.8 bis standard and Farris to improve the system connection from the residential service systems to an ATM network, by incorporating an ATM cell assembler, simplifying the ATM connection process and improving the system reliability by adding an additional network, substituting the IP network of Farris by an ATM network.

16. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over King in view of ITU-T V.8 bis in further view of Sells (US 5,471,522).

King in view of ITU-T V.8 bis teaches all the limitations of the parent claim 18.

King in view of ITU-T V.8 bis does not teach detecting a CNG signal in a new call connection.

Sells teaches detecting a CNG signal in a new call connection to identify fax connection (automatic fax call identification by detecting CNG tones 7:20-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add using CNG tones detecting to the system of King and ITU-T V.8 bis standard to improve the system identification of fax machines.

17. Claims 19 and 21 (as understood) are rejected under 35 U.S.C. 103(a) as being unpatentable over King in view of ITU-T V.8 bis in further view of Bosse (Signaling in telecommunication networks, Wiley-Interscience, 1997).

Regarding claim 21, King in view of ITU-T V.8 bis teaches all the limitations of the parent claim 18, including detecting initial data tones 3:60-63.

King in view of ITU-T V.8 bis does not teach detecting a No. 5 signaling to identify a new call connection.

Bosse teaches using CCITT No. 5 tones signaling to establish a new call connection (table 4.3-1 supervision signals, including seizure and the release-guard signals indicating the beginning and the end of the call, and 4.3.2 supervision signals and call handling procedures pages 85-86).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add using CCITT tones detecting to the system of King and ITU-T V.8 bis standard to improve the system identification of a CCITT No.5 systems calls start and disconnect.

Regarding claim 19, King in view of ITU-T V.8 bis teaches all the limitations of the parent claim 18, including detecting initial data tones 3:60-63.

King in view of ITU-T V.8 bis does not teach detecting a channel continuity test tone in a new call connection.

Bosse teaches using CCITT No. 6 tones signaling for a continuity check (2010 Hz tone for continuity check pages 139-140).

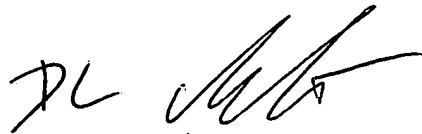
It would have been obvious to one of ordinary skill in the art at the time the invention was made to add using a continuity check tones detecting to the system of King and ITU-T V.8 bis standard to improve the system identification of a CCITT No.6 continuity test, important for a decision on a quality of the transmission of the test call.

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Levitan whose telephone number is (571) 272-3093. The examiner can normally be reached on 8:30 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to be 'DL' followed by a stylized name.

Dmitry Levitan  
Patent Examiner.  
06/06/05